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ABSTRACT

The purpose of this guide is to help home economics teachers facilitate the mainstreaming of handicapped students. The first section provides an overview of mainstreaming, including legislation, least restrictive environment, and role of the vocational teacher. It also discuses five areas of educational needs for handicapped students: socialization skills, positive self-concept development, experiencing daily living activities, developing independence, and employability and occupational skill development. The next section deals with eight disabilities: (1) chronic illness, (2) deafness and hearing impairments, (3) immobility, (4) incoordination, (5) limited energy, (6) limited use or loss of hands, (7) mental retardation, and (8) visual impairments. Definitions, characteristics, problems encountered in the classroom, and suggested teaching and learning strategies for minimizing students' handicaps are noted to promote better understanding of each disability. The next section contains nine guidelines suggested by teachers of handicapped students to serve as a basis for establishing effective programs. A glossary of terms as well as lists of resource materials and selected national, state, and local resource agencies are appended. (YLB)

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A Guide To

Mainstreaming in Home Economics

Compiled by

Sarah Jane Gibbons

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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Preface

The purpose of this guide is to help home economics teachers facilitate the mainstreaming of handicapped students. It is intended to be a beginning —a stepping stone—to a more thorough study of effective teaching of mainsteamed classes. The guide will help define and describe handicapping conditions and provide some practical suggestions for successful teaching.

Meeting the needs of both the handicapped and non-handicapped student is a challenge. It is hoped that the guidelines provided will spark the creativity and ingenuity needed to meet that challenge.

Sharon Redick, Ph.D
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Introduction

WORKING WITH SPECIAL STUDENTS[1]

One of the most dramatic movements that has occurred on the national education scene during the past decade concerns the education of handicapped persons. On September 1, 1978 Public Law 94-142, "The Education For All Handicapped Children Act," became effective. Coupled with Section 504 of the Rehabilitation Act of 1973 these enactments have had a powerful impact on the American education enterprise. Handicapped persons now have the legal right to a free public education in a setting most appropriate for an individual's unique needs.

Mainstreaming: An Overview

Review of Legislation

Public Law 94-142 has four major purposes:

1. To guarantee the availability of special education programming to handicapped youth who require it.

2. To assure fairness and appropriateness in decision-making about providing special education to handicapped youth.

3. To establish clear management and auditing requirements and procedures regarding special education at all levels of government.

4. To financially assist the special education efforts of state and local governments through the use of federal funds. (Ballard, 1977; Torres, 1977)

The central management tool for attaining these purposes is the written "individualized education program" known as the "IEP." The act requires that such a program be developed for every student who must have special education and related services. Further, clarification of the term "individualized education program" indicates that "individualized" refers to a program addressed to an individual student rather than to a group of students. "Education" means that the program is limited to those aspects of the student's education that are specifically special education and related services as defined in the law. And, "program" is a statement of what will actually be provided the student as opposed to general guidelines from which a program can be developed (Ballard, 1977; Torres, 1977).

Classroom teachers play a significant role in the development of handicapped student IEP's. According to the act a regular classroom teacher shall be a member of the IEP team which also includes an administrator, the student's parents or guardian, and when appropriate, the handicapped student.

[1] Redick, S. and Redick, R. "Techniques for Working with Special Students," a chapter in the AVA 1979 Yearbook. American Vocational Association, Washington, D.C., 1979.

Least Restrictive Environment and Mainstreaming

An aspect of the act which will perhaps have the greatest impact upon educational programs is that part which clearly states that each handicapped student will attain his education in the "least restrictive environment." The intent of the law is to place handicapped students in learning environments that will not only meet their unique needs but will also encourage "mainstreaming," i.e. placing handicapped students in educational settings with non-handicapped peers (Ballard, 1977; Torres, 1977). As mainstreaming gains momentum handicapped students who have previously been educated in isolated, segregated settings will join their peers in regular classrooms. Benefits of this movement can be immense. In many cases handicapped students will be able to live with their families in home communities rather than attending residential schools designed for students with particular handicaps. Non-handicapped students will have the opportunity to learn with and from their handicapped classmates. The ultimate cost of education for handicapped students may be reduced as their need for full-time special services diminishes. As more handicapped persons are provided with educational opportunities, more will join the work force and leave welfare status. Thus, the education for handicapped persons acts and the mainstreaming movement will indeed make an impact. That is, if it works—and it is more likely to work if educators, parents, community members, and students strive together to make it an effective movement.

Role of the Vocational Teacher

Vocational teachers will play a vital role in the mainstreaming movement as current trends indicate that handicapped students are frequently placed initially in vocational education classrooms. If they find success there other classes may then be added to their schedules. Thus, if vocational teachers play a leading part in the mainstreaming movement it is essential that they be well prepared both academically and attitudinally to accept handicapped students and help them achieve success.

A first task of the classroom teacher will be to assist in the development of an IEP for each handicapped student in their vocational education program. Fundamental to this undertaking is a basic understanding of the needs of handicapped youth.

Needs Of Special Students

Identification of Needs

Teachers have indicated that an understanding of the educational needs of handicapped students is a prerequisite to providing appropriate instructional programs for them in the mainstreamed classroom (Redick, 1974). Administrators and teachers have identified five areas of educational needs for handicapped students as well as pointing out that the degree of need varies according to individuals (Redick, 1976).

Socialization skills. Because many handicapped students have had limited opportunities to socialize they need to develop socialization skills. In

vocational education classrooms these skills can be promoted by planning activities that provide an opportunity to practice social skills. Instruction can be given in social skills and students can be encouraged to participate in co-curricular activities such as vocational youth organizations.

Positive self-concept development. Many handicapped students experience more failure than success in their educational efforts, therefore there may be a need to help them gain a more positive self-concept. Sequencing learning activities and content from the simple to the complex with success factors built in along the way could help handicapped students to see themselves in a different light. Helping these students develop skills and increasing their ability to be independent is a direct way to build positive self-images.

Experiencing daily living activities. Many handicapped youth have been deprived of daily living experiences that others take for granted, e.g. handicapped students are frequently not permitted in the work areas of the family home such as the kitchen, workshop, garage or utility room. Further, numerous handicapped students have not been allowed to participate in everyday activities in the community at large. Vocational education teachers have an unrivaled opportunity to build experiences of daily living into the curricula through laboratory sessions, field trips, community projects, and other extended learning situations.

Developing independence. A primary goal of handicapped persons is to gain the maximum degree of independence their handicap will permit. Through vocational education, and more specifically home economics, handicapped students can learn skills such as resource management, food planning and preparation, clothing selection, laundry techniques, home design and care and other skills that can grant them greater independence.

Employability and occupational skill development. Independence for the handicapped person also includes the pursuit of vocational opportunities. In vocational education these students can learn employability skills that are prerequisites to job training. Encouraging time management practices and promptness while developing the ability to think critically, make decisions, organize and follow through ultimately aid handicapped students increase their readiness for job training. Additionally, handicapped students in vocational education programs can be introduced to career opportunities as well as be trained for specific occupations.

Awareness of these needs, i.e. development of socialization skills, gaining a positive self-concept, experiencing daily living activities, becoming independent, and developing employability and occupational skills can help vocational education teachers plan and implement instructional programs designed to be responsive to handicapped students' inadequacies in these areas. Although awareness of the above needs of handicapped students is a step in the right direction, the teacher needs an understanding of the handicapping conditions and the concerns they may cause in mainstreaming."

The next section deals with the following disabilities: Chronic Illness; Deafness and Hearing Impairments; Immobility; Incoordination; Limited Energy; Limited Use or Loss of Hands; Mental Retardation and Visual Impairments. Definitions, characteristics, problems encountered in the classroom, and suggested teaching and learning strategies for minimizing students' handicaps have been noted to promote better understanding of each disability. A glossary of terms as well as a list of resource materials and agencies has been included to assist teachers in working with disabled students.

HANDICAPPED STUDENTS IN THE CLASSROOM

Chronic Illness

Chronic illness refers to a group of longterm diseases or health problems which may hinder the student's activity while in the classroom and/or may cause excessive absences from class.

Some diseases or conditions which are often considered chronic illnesses and may be seen in the classroom are:

Allergies	Cystic Fibrosis
Alcoholism	Diabetes
Anemia	Epilepsy
Drug Abuse	Hemophilia
Rheumatoid Arthritis	Kidney Disorders
Asthma	Migraine Headaches
Congenital Heart Disease	Ulcerative Colitis

(See glossary of terms for definitions of conditions or diseases.)

Possible Problems Encountered in the Classroom and Related Areas

Besides the illnesses themselves *CHRONICALLY ILL* students experience problems related to participation in classroom activity. Some of those problems are listed below.

1. Due to incidence students may have high rates of absenteeism which could present such problems as:
   a. Weak academic backgrounds in some areas due to previous absences.
   b. Reduced access to valuable information or learning experiences.
   c. Loss of opportunities for interaction with peers causing problems in the formation of peer relationships.
2. Illness may lessen the student's energy level and work tolerance when he/she is at school.
3. Treatments, medication, or disease process may cause side effects which interfere with classroom activities or concentration.
4. Presence of chronic pain reduces mental acuity.

Minimizing the Handicap: Teaching and Learning Strategies

CHRONICALLY ILL: In teaching students who are chronically ill it is necessary to consider the possibility of high absenteeism, low energy level in the classroom, and side effects of treatments or medications the students may be using. Some of the strategies mentioned below may minimize the learning problems frequently encountered by chronically ill students.

1. Become familiar with the students' conditions so that their energy level and work tolerance may be included in planning learning strategies. Be alert to signs of stress, fatigue, and illness from students.

2. Be flexible in scheduling and accepting assignments, but expect the same amount of work from chronically ill students as from other students.

3. Coordinate class times by scheduling the more concrete subject areas early in the day, and study halls and less strenuous activities later in the day.

4. Encourage group interaction which provides opportunities for all students to succeed. If students seem willing to participate, initiate a peer tutoring program.

5. If high absenteeism is a problem, plan activities which may be completed at home and use tapes, films, etc., which may be used by individual students upon returning to school. This prevents students from missing valuable learning experiences. Work with the students' families to support and assist the student, but do not allow the work to be done for the student.

6. Prepare a medical desk chart for all chronically ill students including diseases, medications, physical limitations, and special instructions.

7. Investigate the resources available to teachers and students. Valuable resources are the school or county nurse, school counselors, social agencies, and parents.

Deaf and Hearing Impaired

A *DEAF* person is one whose hearing disability makes successful processing of verbal communication impossible, with or without the use of hearing aid.

HEARING IMPAIRED generally refers to a person who has residual hearing and is able to process verbal communication successfully with the use of a hearing aid. Hearing can be used as a learning channel.

Some common forms of hearing loss are listed below;
Conduction Deafness
Sensory Neural Deafness
Mixed Deafness
Central Deafness
Cortical Deafness
(See glossary of terms for definitions of terms.)

Possible Problems Encountered in the Classroom and Related Areas

DEAF persons and those with *HEARING IMPAIRMENTS* often have problems related to communication skills and socialization which frequently affect the educational process. Some of those problems are listed below.

1. If a hearing impairment is congenital, language development may be very slow and difficult.

2. Students with adventitious hearing impairments have acquired language before the onset, but error and irregularities in pronunciation are likely to exist due to a lack of proper auditory feedback.

3. Sociability problems may accompany hearing loss. Persons with auditory disabilities often become withdrawn and inactive. Frequently these persons communicate only with other persons with similar disabilities.

4. Failure to participate in activities with peers deprives persons with auditory disabilities of opportunities for social maturation as well as physical growth and motor skill development.

5. Safety must be considered since deaf persons cannot hear fire alarms and other safety warnings.

6. Hearing loss influences voice quality, volume, rhythm, and inflection.

7. Hearing impairments cause confusion during discussion. Questions often need to be repeated and words are frequently misunderstood.

Minimizing the Handicap: Teaching and Learning Strategies

DEAF AND HEARING IMPAIRED: Students who are deaf or those with hearing impairments are likely to have or have had some contact with professionals trained in the areas of speech and hearing. It is advisable for classroom teachers to maintain contact with those persons in order to provide the best possible educational plan for the students.

Within the regular classroom, teachers may assist the deaf and hearing impaired students by initiating the following practices.

1. Provide a visually stimulating environment. Take advantage of visual channels for learning through the use of bulletin boards, handouts, worksheets, chalkboard, individual and group projects, and personal experiences.

2. Be sure all students are paying attention before giving directions. For important assignments, write the instructions on the chalkboard.

3. Some students with hearing impairments read lips. When talking to the class, be sure to face them, not the chalkboard. Try to arrange the room so that the teacher faces the light. This avoids eye strain for the students and prevents a shadow which might hinder lip reading. Articulation should be natural. Exaggerated speech movements detract from the meaning of the context. Talk a little more slowly, clearly, and distinctly, but not louder when a lip reader is in the classroom.

4. Classmates need to be oriented to the hearing impaired students' problem in a way that they are aware of their special needs, but *not* in a way that encourages *pity* or a condescending attitude. Explanation and orienta-

tion, if done early in the year hastens acceptance. Take advantage of peer tutor situations if students seem willing to participate.

5. Encourage deaf and hearing impaired students to participate in extra-curricular and social activities. Too often they tend to isolate themselves or socialize with only persons having similar disabilities.

6. Encourage students to participate verbally in class. Do not be embarrassed if the student is not easily understood. Ask him/her to repeat his/her response if necessary. Do not pretend to understand if the student is not initially understood. This is frustrating and worthless to the student.

7. If possible, give students advanced notice of subjects to be discussed. It is desirable to give reading assignments early so that students can become familiar with vocabulary.

8. Show the students a willingness to assist with language problems and to make the effort needed to facilitate learning.

9. Remember that students with hearing impairments are fatigued more rapidly than other students because of the continuous strain resulting from efforts to keep up with and compete in classroom activities.

10. Be willing to accept an interpreter in the classroom who is able to relate information by sign language.

11. Allow the use of a tape recorder so material presented in class may be relayed at home by manual communication.

Immobility

Immobility refers to the inability to function at an accepted level to perform socially, personally, and vocationally due to injuries, diseases, or deformities that occur in the muscular, skeletal, and neuromuscular systems. These restrictions would hinder immobile persons unless the physical environment is adapted to their needs.

Some conditions or diseases contributing to immobility which may be seen in the classroom are:
Cerebral Palsy (Spasticity, Athetosis, Ataxia)
Poliomyelitis
Spina Bifida
Rheumatoid Arthritis
Muscular Dystrophy
Cardio-Vascular Disease
Posture Defects
Accidents (Burns, Amputations, Spinal Cord Injuries causing paraplegia, quadraplegia)
(See glossary of terms for definitions of conditions or diseases)

Possible Problems Encountered in the Classroom and Related Areas

IMMOBILITY may cause some problems within the classroom that are not directly related to learning, but impede the educational process. Some such problems are listed below.

1. The students may be unable to enter the school bus or building because of barriers to wheelchair or assistive prosthetic or orthotic devices.

2. Barriers throughout the school may prevent students from proceeding in and about the building in wheelchairs or on crutches.

3. "Standard" desks, chairs, and other equipment may not fit the person with prosthetic devices such as braces.

4. Immobility may impede students from taking part in all activities, both regularly scheduled and extracurricular which are designed for non-disabled students.

5. Problems may be encountered in such skill areas as typing, industrial arts, and home economics labs where special equipment is used and activities require a degree of motor coordination.

6. The lack of such items as handrails to aid walking, well designed bathroom fixtures for persons with disabilities, or adequate space for maneuvering in cafeteria lines cause problems for students with reduced mobility.

Minimizing the Handicap—Teaching and Learning Strategies

IMMOBILITY: Since most of the problems of immobility evolve from physical barriers, the most useful strategies are those which eliminate such barriers. Use the American National Standards Institute standards in barrier removal. Some suggestions for eliminating such barriers are included below.

1. Provide parking spaces near entrances and accessible buses for those who do not drive. This is a mandated responsibility of public school systems.

2. Construct ramps, curb cuts or gradings in addition to standard curbs and steps.

3. Install elevators in buildings with more than one floor or provide all programs space on the ground floor.

4. Widen doorways to buildings and classrooms to provide adequate space for movement of students with prosthetic or orthotic assistive devices.

5. Provide sturdy, easily accessible hand railings in hallways and restrooms.

6. Modify restrooms so that lavatories allow for wheelchair clearance and there is room for transfer from wheelchair to toilet.

7. Place doorknobs and levers lower for easier reach.

Most of the items on the list above cannot actually be accomplished by teachers, but teachers should be familiar with them and encourage such action to be taken.

In addition to the removal of structural barriers, teachers may include some of the following strategies to assist students with immobility in their classes.

1. If a structural barrier restricts students from a regularly scheduled classroom, be willing to move the class to a barrier free classroom.

2. Use special equipment as needed to facilitate learning for students with immobility, but try to limit such equipment to items which are inexpensive and could be duplicated for students' use at home. Some such equipment may include reachers and lap boards.

3. Help students plan their work effeciently in lab classes so that excess steps can be eliminated and expenditure of energy is kept at an acceptable level.

4. Rearrange the classroom if possible to allow aisles and walkways of adequate width for movement of students with prosthetic or orthotic assistive devices (32").

5. Evaluate storage arrangement and rearrange if necessary so that frequently used equipment is easily accessible to all students.

6. If there is a choice, select tables and chairs rather than desks for students so that the room may be arranged as needed and students in wheelchairs may participate more easily with other students.

Incoordination

Incoordination is the inability to control the movement or function of muscles to the extent necessary for smooth muscular action. Some types of incoordination include Ataxia (a staggering gait), Dysmetria (inability to arrest muscular movement), Dysarthria (slurred speech), Tremor (shaking movement apparent when performing a task), Rebound Phenomenon (inability to perform rapid, alternating movements).

Some conditions or diseases which are commonly associated with incoordination are:

Myasthenia Gravis
Cerebral Palsy
Muscular Dystrophy
Multiple Sclerosis
Parkinson's Disease
Loss of Hearing
Hemiplegia
(See glossary of terms for definitions of conditions and diseases)

Possible Problems Encountered in the Classroom and Related Areas

INCOORDINATION is likely to cause some unique problems in the classroom. Some such problems may include the following:

1. Students may have some difficulty writing or doing other activities that require fine motor skills.

2. In tense or rushed situations students may have increased involuntary movements.

3. Students encounter problems in using lightweight equipment. Heavy, durable equipment is more suitable for students with incoordination.

4. Limited space for movement may make activities difficult for persons with incoordination.

5. Students with incoordination may have poor self concepts or be self conscious because of their lack of coordination or the attitudes of others, especially nondisabled peers, toward the disability.

6. Impaired speech and problems in the formation of sounds often accompany incoordination.

Minimizing the Handicap—Teaching and Learning Strategies

INCOORDINATION: Students with incoordination frequently require adaptive equipment and/or techniques to learn the same material as nondisabled students. Some of those modifications are mentioned below:

1. Avoid the necessity to write or use fine coordination whenever possible. Verbal or tape recorded tests and assignments are often more successful than written ones. Whenever possible involve students in large motor activities rather than fine motor activities.

2. Weighted objects are much easier for students to handle than light weight objects.

3. Materials and equipment the students will use should be secured whenever possible. This may be done by gluing or nailing equipment to the work surface if they will always be used in that location. Items may be temporarily secured by using suction cups or clamps.

4. Use materials which are sturdy, durable, and non-slippery. Glass and other breakable materials should be selected with care. Such considerations as weighted bottoms and squat, easily grasped shapes should be noted.

5. Provide adequate walkways and arrange furniture so that space to maneuver is plentiful.

6. Try to supply a relaxed, positive learning environment. Plan activities using realistic goals so that students experience more successes than failures. Reinforce positive behavior, but avoid punitive responses toward unsuccessful attempts. When incoordinated students are tense or rushed, their involuntary movements are greater.

7. Plan continuous programs which promote coordination development. Use sequential experiences and body image activities. Provide visual and auditory repetition in learning skills and concepts.

8. Be empathic, but not sympathetic. Teachers and students should know that the role of the teacher is to facilitate learning. Do not allow the students' disabilities to cause attitudinal barriers that could hamper the learning process.

9. Encourage students with incoordination to participate actively in classroom experiences. Do not allow them to become passive learners.

10. Create maximum opportunities to include the students in social activities. Attitudes, whether from ignorance, fear of rejection, fear of embarrassment, or lack of social skills, often cause students with disabilities to be excluded from social activities in which nondisabled students perfect such skills.

Limited Energy

Limited energy is described as a limitation imposed by various physical disabilities and diseases resulting in reduced expenditure of energy from the body. The reduction may be a result of minimal amounts of available energy or of forced limitation of expenditure to prevent further physical stress or damage. Limited energy may be noted by a lowered output ability at maximum exertion or in expenditure, even at lower levels, over a prolonged period.

Some conditions contributing to limited energy or requiring limited expenditure of energy which might be seen in the classroom are:

Cardiovascular Disease
Postural Strains due to Injury
Varicose Veins
Rheumatoid Arthritis
Diabetes
Asthma
Allergies
Hemophilia
Epilepsy
(See glossary of terms for definitions of conditions.)

Possible Problems Encountered in the Classroom and Related Areas

LIMITED ENERGY may cause some problems within the classroom which affect the educational process. Some problems result from the disease or condition which requires the limitation of energy. Some general problems related to limited energy include the following:

1. Excessive walking and stair climbing may use energy that could be used in learning activities.

2. Standing for long periods of time causes students with limited energy to tire.

3. Anxiety may be a problem for students if they are not part of schedule planning and management, because they are not aware of teachers' expectations of them.

4. Excess weight may cause physical fatigue and reduce energy available for learning activities.

5. Bending, lifting, reaching, and carrying cause excessive strain, so inefficient storage creates problems for persons with limited energy.

6. Scheduling of classes may not have maximum output classes coordinated with students' energy cycles.

Minimizing the Handicap: Teaching and Learning Strategies

LIMITED ENERGY: Students with limited energy have special classroom needs which make it necessary for teachers to plan activity schedules carefully and maintain specific management techniques. Some of those management techniques are mentioned below:

1. Gain knowledge of energy requirements of various classroom activities and observe student to discover the times at which they reach "peak" energy levels.

2. Schedule activities so that most important material or material requiring most energy expenditure is covered during "peak" time periods.

3. Storage of equipment and supplies should be planned to avoid bending, reaching, lifting, carrying, and other unnecessary expenditure of energy.

4. Time management and orderly procedures aid in preventing mental as well as physical fatigue and relieving some of the anxiety about overwork.

5. Walking and stair climbing should be reduced to a minimum. Standing for long periods of time should be eliminated through the use of stools and chairs. Most activities can be converted to sit-down activities to save energy for other tasks.

6. Students should be encouraged to use step saving techniques such as gathering all supplies needed before beginning to work and using carts and trays to gather supplies to be transported at one time.

7. Encourage students to maintain recommended weight according to height and body build. This will help prevent extra strain and unnecessary use of available energy.

8. Be aware of the medication that students are to take, the side effects it may cause, and the necessary procedures to follow in case of emergency. Carefully follow instructions given by each student's physician concerning the type and amount of activity in which the student may participate.

9. Special equipment such as reachers and mobile utility carts which supplements the needed range of motion will help to conserve energy. Equipment selected should be inexpensive if purchased or adapted from supplies normally available in the home (example: long handled tongs for reachers) since students are likely to duplicate such equipment for use at home.

10. Students should be encouraged to incorporate behavior and management patterns learned in class into their own homes and other work situations.

11. Consider students' values and assist students in recognizing their own values in deciding what work might be eliminated, since elimination, delegation, or retraining may be necessary for students in their own home.

Limited Use Or Loss Of Hands

Limited use or loss of hands is a physical problem involving the loss or limitation of function of one or both hands. Functional loss may include control of the use of fingers in holding, grasping, manipulating, or positioning. This condition may be permanent, periodic, or temporary.

Some diseases or conditions associated with limited use of hands are:

Amputation
Accidents (Burns, Cuts with non-repaired restrictive scars)
Arthritis
Congenital Defects
Neurological Impairments
Developmental Defects
Birth Defects resulting from drugs used during gestation.
Multiple Sclerosis
Spinal cord injuries in cervical area of the spine causing quadraplegia
(See glossary of terms for definitions of diseases or conditions)

Possible Problems Encountered in the Classroom and Related Areas

LIMITED USE OR LOSS OF HANDS: Limited use or loss of hands is a broad category of disabilities involving a variety of functional losses and problems associated with such losses. Some functional problems that may concern persons with limited use or loss of hands are mentioned below.

1. Digital manipulation, which is the ability to control movement by using the fingers, may be difficult for some persons who have limited use of hands.

2. Sequential manipulation, which is the movements of fingers in a successive order from simple to complex, may cause difficulties since persons with limited use of hands may not have control of such function.

3. Dual use of hands (use of both hands) may be difficult for persons with limited use of hands and especially for those who have lost one or both

hands. Some specific problems may be seen in transferring bulky items, and holding grasping, positioning, and manipulating large, slippery, or heavy items.

Minimizing the Handicap—Teaching and Learning Strategies

LIMITED USE OR LOSS OF HANDS: In teaching students with loss or limited use of hands it may be necessary to focus on special teaching and learning methods other than those normally used in the classroom. Those special methods may include some of the following.

1. Plan activities for gross motion rather than precise finger motion. Avoid tasks that require writing or other forms of fine movements. Replace these activities with oral or audiotape recorded activities.

2. Plan time schedules with consideration of reduced speed. Many of the same activities can be accomplished by students with limited use of hands as by nondisabled students if additional time is allowed.

3. Simplify tasks by dividing them into smaller work units. This prevents student frustration and allows the students to feel more confident because they have experienced a series of small successes.

4. Encourage students to use the limited limb for supporting or weighting down materials and doing gross motion while doing finer skills with the other limb.

5. In class, introduce and use available aids or adaptive devices for working with only one hand. Devices selected should be inexpensive or easily constructed so that students may duplicate them for use in their own homes.

6. Secure equipment and supplies whenever possible so that students may concentrate on the actual task to be performed rather than secondary grasping tasks such as holding or maneuvering.

7. It may be helpful to simulate the physical disability when planning to determine the most useful methods of teaching a skill. This is practical in developing appropriate teaching techniques and establishing empathy (not sympathy) with the student.

8. Consider students' values and assist students in recognizing their own values in deciding what work might be eliminated, since the elimination of some tasks might be necessary for students in their own homes

Mentally Retarded

EDUCABLE MENTALLY RETARDED describes persons of developmental age who, because of slow mental development, are frequently unable to function at the same intellectual level as their non-disabled peers. They have potentialities for learning basic academic information at a slower rate than other students and have the capacity for social adjustment and partial or total self-support as an adult.

TRAINABLE MENTALLY RETARDED students are those who have a rate of intellectual development which is one-fourth to one-half of normal persons. Therefore, they respond more slowly to education and training than do educable mentally retarded persons. Trainable mentally retarded persons have the capacity to learn self-care activities, adjust to community life, and learn economic usefulness in a protective environment. Trainable mentally retarded students are not frequently enrolled in regular classes.

The causes of specific cases of mental retardation are often unknown. The reason for listing any casual factors or diseases is to provide the educator with some background in the field or to serve as a starting point in researching the most commonly recognized precipitating factors. A limited list appears below:

Infections and Intoxication
Metabolic Disorders and Nutrition Problems
Trauma (pre or post natal)
Post Natal Brain Diseases
Chromosomal Abnormalities such as Downs Syndrome
Gestational Disorders
Psychiatric Disorders
Prenatal Exposure to Drugs, Chemicals, and Radiation

Possible Problems Encountered in the Classroom and Related Areas

MENTALLY RETARDED students have some characteristics and problems which create the need for special teaching techniques. Some of those characteristics and problems which are often *but not always* encountered in the classroom are mentioned below.

1. Short attention span is a common characteristic of mentally retarded students.

2. Language and communication skills of mentally retarded students are often very poor.

3. Poor work habits are sometimes characteristic of mentally retarded students.

4. Failure in activities creates feelings of inadequacy and frustration.

5. Poor memory of past experiences and limited amounts of incidental learning cause problems for mentally retarded students.

6. Mentally retarded students frequently have difficulty understanding cause and effect relationships.

7. Mentally retarded students often have a limited ability to think and reason abstractly.

8. Mentally retarded students have difficulty in attacking, analyzing, and solving problems.

9. Educable mentally retarded students may have problems with incomplete or inaccurate concept formation.

10. Incomplete and inaccurate perception may cause educable mentally retarded students to see background instead of fore-ground on the printed page, word or letter reversals, or repeated images in a printed word.

11. Educable mentally retarded students may find difficulties in generalizing.

12. Educable mentally retarded students may exhibit emotional behavior similar to that of younger children. They may seem to be immature and foolish for persons of their chronological age and size.

Minimizing the Handicap—Teaching and Learning Strategies

MENTALLY RETARDED: Some unique classroom and lesson organization, management, and teaching strategies facilitate learning for mentally retarded students. Several suggestions for the implementation of such techniques are listed below:

1. Since students often have short attention spans it may be helpful to plan concise learning periods in which one or two specific objectives are met. Such learning experiences allow students to feel successful and provide reinforcement and motivation to begin additional learning activities.

2. Problem solving is frequently difficult for mentally retarded students because they lack the abilities to sequence and reason abstractly. In learning, they need to move from concrete to abstract and from simple to complex. Students need to participate in activities which allow them to experience the consequences of their behavior.

3. It is helpful to demonstrate activities rather than explaining them. Allow students to demonstrate behaviors that have been modeled by the teacher. Use simple language to describe what is being done.

4. Since incidental learning is probably limited, students need help in becoming aware of the immediate environment. Teachers should analyze teaching tasks and develop carefully sequenced steps to assure that students learn complete concepts.

5. Practice in using an expanded oral and written vocabulary helps mentally retarded students to improve language and communication skills. Routine practice should emphasize oral skills. Using all senses may improve learning. For example, colorful, raised, or textured flash cards and posters may reinforce the learning of new vocabulary words. Allow students free time to look at, say, and feel the words on the cards and posters.

6. Students need help in accepting reality. They need to be recognized and praised for their strengths and successes. Weaknesses should be identified, but should not be considered defects.

7. Mentally retarded students function emotionally and academically at the level of their mental age, not chronological age. For mentally retarded students the chronological age is always higher than the mental age.

8. Teachers should limit the amount of work given at one time. Allow mentally retarded students to work at a suitable pace.

9. Provide students with opportunities to learn through field trips, personal experiences, examples, and visual aids.

10. It is necessary to review basic knowledge and previous materials on which a learning experience is based. Build from simple to complex.

11. Provide multi-sensory learning experiences.

12. Use as few words as possible. When giving oral directions to students, use vocabulary similar to that of the students.

13. Remember that there is not a typical mentally retarded student. Each student's needs must be considered individually.

14. Slide presentations are helpful in encouraging mentally retarded students to work independently. Slides may be made from a purchased filmstrip which gives step by step procedures for completing a project. Students may view one slide at a time on a slide viewer and complete the step shown on each slide before going to the next one.

Visually Impaired

Visual impairments are divided into categories of Partially Sighted or Legally Blind.

Partially Sighted persons are those whose visual acuity is 20/70 to 20/200 in the better eye after correction. Vision can be used with some assistance as a major channel of learning.

Legally Blind persons are those with visual acuity of 20/200 or less in the better eye after best correction, or a peripheral field of no greater than 20 degrees. These persons may have some useful sight, but vision cannot be considered a major learning channel.

Possible causes of visual impairments include:

Accidents
Prenatal Damage (Rubella)
Excess Exposure to Oxygen in Neonatal Period
Diabetes
Cataracts
Congenital Defects

Some common visual impairments include:

Defects in Refraction (nearsightedness, farsightedness)
Disorders of the Cornea
Cataracts (cloudiness causing blurred vision)
Diseases of the Retina (as a result of diabetes, circulatory disturbances, tumors, or other health problems)
(See glossary of terms for definitions.)

Possible Problems Encountered in the Classroom and Related Areas

The major problem cited in teaching BLIND students is the inability to use vision as a major channel of learning. Other problems may exist depending on the cause of the blindness. Problems which ofter exist include the following:

1. Due to lack of environmental feedback and visual verification the motor performance of blind students will appear to be awkward or inferior to that of other students. Navigation in unfamiliar or crowded places may be particularly difficult.

2. Ignorance and fear, resulting in negative attitudes toward blind students may produce sociability problems. The student's self concept has significance in the foundation of interpersonal relationships.

3. Blindness limits perception and cognition in three ways including:

a. Range and variety of experiences.

b. Reduces ability to receive and respond to environmental signals, thus limiting ease of mobility.

c. Control of the environment and of the self in relation to it.

4. Training to develop other senses after the onset of blindness is lengthy and often difficult. It is not something that happens automatically. For example, when sight is lost, hearing does not become more acute, it simply becomes better trained to provide information

Partially sighted students have some problems in common with blind students, but they have some unique problem as well. Their sight allows the use of some visual channels in education but some difficulties exist in using common visual materials.

1. Partially sighted students are generally unable to use textbooks and other written materials with normal print size.

2. Seeing words written on the chalkboard may be difficult or impossible if the students are seated a distance from the chalkboard and writing is of usual size.

3. Charts or graphs with overlays become a maze of indistinguishable material unless value variations, and size are considerably larger than normally used.

Minimizing the Handicap: Teaching and Learning Strategies

VISUALLY IMPAIRED: In teaching visually impaired students it is necessary to realize that vision might not be an acceptable channel for learning. Some suggestions for using other learning channels as well as some general classroom strategies are listed below.

1. Orientation in the classroom is important for visually impaired students. Orient the students to the classroom by referring to locations of

major furniture or architectural variances. Give orientation to equipment and supplies as needed and give specific directions for finding them. Orientation to a work area may be in relation to a time piece, for example: the pencil is at one o'clock and the ruler is at three o'clock.

2. Orient classmates to the problems and needs of visually impaired students. Identify techniques to involve the visually impaired students in academic, social, and extracurricular functions.

3. Expect all students to be as independent as possible. Don't allow pity to foster dependence in a blind student.

4. Visually impaired students are not necessarily deaf nor mentally retarded. Don't shout when talking to them. Expect them to be of normal intelligence unless it has been otherwise determined.

5. Take advantage of the students' ability to hear. Use class discussion, taped instruction, verbal assignments, taped reading materials, tests on tape, oral tests, and any other audio materials available.

6. Persons in the room will be identified by voice. Identify students until voices become familiar. Maintaining a consistent seating arrangement is helpful.

7. Carefully explain any visual learning experiences so that visually impaired students do not miss material that other students are learning.

8. Encourage the development and use of tactile skills. Teach vocabulary words and other assignments through the use of textured letters and objects. If students read braille find out what materials are available in the area and what can be ordered through the school system or resource agencies.

9. Marking of equipment may be helpful for visually impaired students. Some items used to provide tactile markings might be drops of white glue, staples, different sized pieces of tape, or labels with raised letters. Partially sighted students may use color coding or large letters to mark equipment.

10. Additional safety precautions are needed when visually impaired students participate in a classroom. Protruding objects should be eliminated. Heat resistent handles on equipment should be used. Electrical cords should be out of the way. Asbestos pads should be used as hot pads. Long asbestos gloves are recommended for oven use. Rearrangement of furniture, equipment, and supplies should be minimized after orientation takes place unless students are notified of the change.

11. Words printed in purple ink or on colored paper are often impossible for partially sighted students to see and read. Black print on white paper provides the greatest contrast and allows for easier reading.

GENERAL GUIDELINES FOR WORKING WITH HANDICAPPED STUDENTS[2]

The following guidelines have been suggested by teachers of handicapped students to serve as a basis for establishing effective programs (Redick, 1976; 1978).

Conference. Conferencing with each handicapped student prior to the beginning of classes can help the teacher begin to establish rapport as well as provide an opportunity to gather pertinent data. At this time the teacher can learn about the student's functional ability and prior experiences he has had in relation to course content.

Tour. Before classes meet allow the handicapped student to tour the classroom facilities in order to discover accessibility problems. It is particularly important that physically handicapped students have this opportunity.

Learn about handicapping condition. Become familiar with the student's condition by reading and conferencing with family members and school personnel. The most pertinent information to obtain is how the handicapping condition affects a particular student, the student's acceptance of the condition, and his degree of functional ability. It is best to stress the student's abilities rather than his disabilities.

Accept. Accept and respect the handicapped student as a person in his own right, a unique individual, as is every student in a class. It is crucial to recognize individuality among similarly handicapped students.

Avoid over-protection. On the one hand it is important not to overly protect the handicapped student while on the other recognizing individual needs. Of course, safety factors are of paramount concern at all times.

Adapt tasks. Many handicapped students can participate in most classroom activities but some tasks require adaptation. When this is necessary ask the student for suggestions. Having lived with his handicapping condition he may have made adjustments previously for similar situations.

Provide time. Time is a primary factor. Because of the nature of their conditions many handicapped students require more time to complete some tasks. Models of classroom organization/management that provide flexibility in time allotment are most useful in these situations.

Encourage independence. Sometimes it will be easier to perform a task for a handicapped student rather than teaching the student to perform the task or allowing him the necessary time to accomplish it. Encourage independence by permitting each student time to develop individual skills.

Seek help. Be aware of and seek help from qualified consultants. Teachers can benefit greatly from the input of other professionals including

[2] Ibid.

medical personnel and therapists as well as psychological, vocational and educational personnel. Each of these professionals can help the teacher be more effective in planning and implementing educational programs for handicapped students.

Summary

As handicapped students enter the mainstream of education, home economics teachers have a unique opportunity to help them gain independence and function at their maximum level. The very nature of home economics content, learning activities, and learning environments make it an appropriate educational program for all students. For the student with special needs it can make the difference between dependent and *independent.* living.

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GLOSSARY OF TERMS

Adventitious-Acquired or accidental, onset after birth.

Allergy-Hypersensitivity of the body cells to a specific substance that results in various types of reactions.

Amputation-The surgical removal of a limb or a portion of a limb.

Anemia-A condition in which the number of red blood cells are less than normal.

Arthritis-Inflammation of a joint.

Asthma-A disease marked by reoccurring attacks of difficulty or distress in breathing due to a bronchial constriction.

Birth Trauma-An experience during the birth process which inflicts serious damage to an organism. Damage may be physiological or psychological.

Cardiovascular Disease-Disease related to the heart and blood vessels.

Cataract-A loss of transparency of the crystalline lens of the eye or of its capsule.

Central Deafness-Hearing loss caused by injury to the brain stem.

Cerebral Palsy (C.P.)-Defect in motor power and coordination related to brain injury that is usually incurred before or during birth.

Spasticity-A Form of cerebral palsy characterized by excessive tension of muscles and heightened resistence to flexion or extension, making movement difficult or impossible.

Ataxia-A form of cerebral palsy frequently characterized by poor balance, incoordination, and rapid eye movement.

Athetosis-A form of cerebral palsy characterized by nonrhythmic, purposeless movements in conjunction with voluntary movements causing gross incoordination. Visual and hearing losses may also be associated with athetosis.

Conduction Deafness-Impaired hearing resulting from injury to or interference with conduction of sound to the inner ear.

Congenital-Existing at or dating from birth.

Cornea-A transparent membrane forming part of the outer coat of the eyeball.

Cortical Deafness-Deafness resulting from injury to the cerebral cortex.

Cystic Fibrosis-An inherited condition involving the pancreas, lungs, and other organs, frequently involving chronic lung disease.

Diabetes-A disease in which the body produces no insulin or inefficiently uses the insulin to metabolize sugar. It is usually characterized by high levels of sugar in the blood and excess sugar in the urine.

Disability-A medically diagnosed disease, disease process, or trauma.

Downs Syndrome-A syndrome usually involving mental retardation caused by presence of an additional chromosome.

Epilepsy-A disorder characterized by seizures and associated with disturbances of electrical activity of the brain.

Handicap-A functional limitation due to a physical disability or barriers imposed by the environment.

Heart Disease-A defect of the heart characterized by abnormalities of the heart or its vessels.

Hemiplegia-Muscle weakness of the right or left half of the body.

Hemophelia-An inherited disorder of the blood marked by a permanent tendency to hemorrhage.

Lordosis-A curvature of the lumbar spine in which the convexity is directed posteriorly.

Mainstreaming-Incorporating handicapped students into regular classrooms.

Migraine Headaches-A disease involving severe headaches, visual auras, blurred or double vision, and fatigue, which may be triggered by stress, the hormonal cycle, birth control tablets, allergy, or trauma to the head.

Mixed Deafness-Loss of hearing involving both conductive and sensory neural deafness.

Multiple Sclerosis-A disease of the central nervous system which occurs as a result of degeneration of the nerves of the brain and spinal cord.

Muscular Dystrophy-Chronic degenerative diseases of the muscular system characterized by progressive symmetrical muscular weakness. Heredity is a factor.

Myasthenia Gravis-Chronic progressive muscular weakness, beginning usually in the face and throat.

Occupational Therapist (O.T.)-A professional who works under the prescription of a physician using a variety of activities and exercises to help restore the physically or mentally disabled to the highest possible degree of functioning.

Orthopedic-Pertaining to the deformities of the musculoskeletal system.

Paraplegia-Paralysis of half of the body, due to a spinal cord injury usually referring to the lower half including the legs.

Physical Therapist-A professional who works under the prescription of a physician who uses exercise, massage, heat, water, light, and electricity to help patients overcome neuromuscular disabilities.

Poliomyelitis-Inflammation of the spinal cord resulting in paralysis.

Quadraplegia-Paralysis of all four extremities due to a spinal cord injury.

Refractive Errors-The most common impairment of vision causing hyperopia (farsightedness) and myopia (nearsightedness). Corrective lenses are used to correct such defects.

Rehabilitation-The process of restoring the fullest possible physical, mental, social, vocational, economic functioning to persons with disabilities.

Retina-The portion of the eye which receives light impulses which are transmitted to the brain to be interpreted as sight. Diseases or alterations to the retina may cause distortion or loss of vision.

Rheumatic Fever-A disease involving tonsillitis, inflammation of joints, fever, and often causing the development of a heart murmur. Relapses are likely, but may be prevented through the use of penicillin.

Rubella—German measles-If contracted by the mother within the first three months of pregnancy Rubella may result in congenital defects in the child including mental retardation, cataracts, deafness, and heart disease.

Scoliosis-A lateral curvature of the spine.

Sensory Neural Deafness-Loss of hearing due to disorders of the inner ear or auditory nerve.

Spina Bifida-A defect in the spinal column in which the incomplete closure of the bony spine allows the spinal membranes to protrude, sometimes causing infection, paralysis of the legs, and lack of bowel and sphincter control.

Ulcerative Colitis-A chronic inflammation of the colon characterized by bleeding and abscesses frequently causing anemia.

Varicose Veins-A condition in which the veins of the legs are dilated and congested frequently causing pain and fatigue. The condition often occurs in persons who must be standing for long periods of time.

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SELECTED NATIONAL, STATE AND LOCAL RESOURCE AGENCIES

Associations For Handicapped Persons

American Heart Association, 44 East 23rd Street, New York, NY 10010

The Arthritis Foundation, 1212 Avenue of the Americas, New York, NY 10036

Disabled Living Foundation, 346 High Street, Kensington, London, W.14, 8N.S., England

Federation of the Handicapped, 211 West 14th Street, New York, NY 10011

Muscular Dystrophy Associations of America, 1790 Broadway, New York, NY 10019

National Association of the Physically Handicapped, 2 Meetinghouse Road, Merrimack, New Hampshire 03054

National Association for Retarded Citizens, 2709 Avenue E, East, Arlington, Texas 76011

National Congress of Organizations of Physically Handicapped, 7611 Oakland Avenue, Minneapolis, Minnesota 55423

National Easter Seal Society for Crippled Children and Adults, 2023 West Ogden Avenue, Chicago, Illinois 60612

National Foundation for Birth Defects (formerly the March of Dimes) Box 2000, White Plains, New York 10602

National Multiple Sclerosis Society, 257 Park Avenue, South, New York, NY 10017

National Odd Shoe Exchange, 1415 Ocean Front, Santa Monica, California 90401

National Paraplegia Foundation, 333 North Michigan Avenue, Chicago, Illinois 60601

National Rehabilitation Association, 1522 K Street, N.W., Washington, D.C. 20005

National Wheelchair Athletic Association, 40-42 62nd Street, Woodside, New York 11377

United Cerebral Palsy Association, 66 East 34th Street, New York, NY 10016

Rehabilitation Agencies

American Physical Therapy Association, 1156 - 15th Street, N.W., Washington, D.C. 20005

Kenny Rehabilitation Institute, 1800 Chicago Avenue, Minneapolis, Minnesota 55404

International Association of Rehabilitation Facilities, 5530 Wisconsin Avenue, Washington, D.C. 20015

International Society for the Rehabilitation of the Disabled, 219 East 44th Street, New York, NY 10017

Vocational Rehabilitation

American Occupational Therapy Association, 6000 Executive Boulevard, Suite 200, Rockville, Maryland 20852

Department of Health, Education, and Welfare, Rehabilitation Services Administration, Washington, D.C. 20201

Goodwill Industries of America, 9200 Wisconsin Avenue, Washington, D.C. 20014

State Divisions of Vocational Rehabilitation.

Education

Association for Children with Learning Disabilities, 2200 Brownsville Road, Pittsburgh, Pennsylvania 15210

Clothing and Research Development Foundation, Inc., 48 East 66th Street, New York, NY 10021

The Council for Exceptional Children, 1411 S. Jefferson Davis Highway, Arlington, Virginia 22202

Department of Health, Education, and Welfare, Office of Education,

Bureau of Education for the Handicapped, Washington, D.C. 20202; "Closer Look," Box 1492, Washington, D.C. 20036

National Rehabilitation Counseling Association, 1522 K Street, N.W., Washington, D.C. 20005

Public Affairs Pamphlets, 381 Park Avenue, South, New York, NY 10016

Public Health Service, Division of Chronic Diseases, U.S. Department of Health, Education and Welfare, Washington, D.C. 20201

State and local boards of education.

U. S. Office of Education, Division on Handicapped Children, Washington, D.C. 20202

U. S. Public Health Service, Office of Information, 5600 Fishers Lane, Maryland 20852

Recreation

American Association for Health, Physical Education and Recreation, Unit on Programs for the Handicapped, 1201 - 16th Street N.W., Washington, D.C. 20036